

IDEAS² awards

THE DESIGN AND CONSTRUCTION INDUSTRY

recognizes the importance of teamwork, coordination, and collaboration in fostering successful construction projects today more than ever before. In support of this trend, AISC is proud to present the results of its annual IDEAS² awards competition. This program is designed to recognize all team members responsible for excellence and innovation in a project's use of structural steel.

Awards for each winning project were presented to the project team members involved in the design and construction of the structural framing system, including the architect, structural engineer of record, general contractor, detailer, fabricator, erector and owner.

New buildings, as well as renovation, retrofit, or expansion projects, were eligible. The projects also had to display, at a minimum, the following characteristics:

- A significant portion of the framing system must be wide-flange or hollow structural steel sections;
- Projects must have been completed between January 1, 2008 and December 31, 2010;
- Projects must be located in North America;
- Previous AISC IDEAS² or EAE award-winning projects were not eligible.

A panel of design and construction industry professionals judged the entries in three categories, according to their constructed values in U.S. dollars:

- ✓ Less than \$15 million
- ✓ \$15 million to \$75 million
- ✓ Greater than \$75 million



From left: Zimmerman, Klemens, Walls, Long, Theel, Tofighi, Schneider

The judges considered each project's use of structural steel from both an architectural and structural engineering perspective, with an emphasis on:

- Creative solutions to the project's program requirements;
- Applications of innovative design approaches in areas such as connections, gravity systems, lateral load resisting systems, fire protection, and blast;
- The aesthetic and visual impact of the project, particularly in the coordination of structural steel elements with other materials;
- Innovative uses of architecturally exposed structural steel;
- Advances in the use of structural steel, either technically or in the architectural expression;
- The use of innovative design and construction methods such as 3D building models; interoperability; early integration of specialty contractors such as steel fabricators; alternative methods of project delivery; or other productivity enhancers.

Both national and merit honors were awarded. The jury also selected one project for the Presidential Award of Excellence in recognition of distinguished structural engineering.

2011 IDEAS² Awards Jury ➤

► **Kent Long**, P.E., joined Dallas-based Balfour Beatty Construction in 1988 and has experience as a project engineer, chief estimator, project manager, vice president of estimating, senior vice president business acquisition and currently as senior vice president of federal projects for the Southeastern U.S.

A licensed professional engineer, he is particularly strong in civil and structural design analysis. In his current role, he oversees the strategic marketing, business development and operational execution efforts of the federal market in the Southeast.

Long is the past chairman of the Associated Builders and Contractors Florida East Coast Chapter and is currently the incoming president for the South Florida Society of American Military Engineers.

He earned a Bachelor of Science in Civil Engineering from the University of Missouri and a Bachelor of Science in Construction Management from the University of Louisiana at Monroe.

► **Jay W. Schneider** is editor of *Building Design+Construction*, an SGC Horizon publication based in Arlington Heights, Ill. *BD+C* serves more than 75,000 architects, engineers, contractors, building owners, and real estate executives. The magazine has won four Jesse H. Neal Awards, as well as accolades from the American Society of Business Publication Editors (ASBPE) and the Construction Writers Association.

Schneider received an Honorable Mention from the Construction Writers Association's Kneeland Godfrey Award for Body of Work category in 2007 and 2009. He was elected to the Construction Writers Association board in 2009.

Prior to joining *BD+C*, Schneider was an editor for Elmen Publications, San Rafael, Calif., and Hanley-Wood Inc., Washington. He is a graduate of Syracuse University.

► **Robert P. Theel**, AIA, serves as the U.S. General Services Administration's chief architect in the six-state Great Lakes Region headquartered in Chicago. He is the senior advisor to the regional administrator of GSA and the regional commissioner of the Public Building Service (PBS) regarding federal architecture, design, construction policy and innovation. He provides leadership for the regional design and construction programs for U.S. courthouses, federal office buildings and border stations.

Theel is a graduate of the Illinois Institute of Technology and has served the government as a design architect, project manager and design director prior to establishing the position of chief architect for the Great Lakes Region of GSA in 1999. In 2005, he was also appointed director of the regional Design & Construction Division. For his role in establishing and supporting GSA's Design Excellence Program, Theel is a recipient of GSA's "Excellence in Public Architecture" award.

► **Farro Tofighi**, P.E., is a managing principal at DeSimone Consulting Engineers. He joined the firm in 2005 to help open its Las Vegas office. His dedication to the field of structural engineering and excellent client service is an integral part of his firm's business ethics.

Tofighi has more than 25 years of experience that covers a broad range of project types including office buildings, high-rise condominiums, educational facilities, entertainment complexes, and hospitality and gaming facilities. He has

extensive experience in seismic design standards and three-dimensional dynamic analysis of complex and specialty structures. For the past 15 years, Tofighi has been involved in the structural design of many leading Las Vegas hotels and casinos as well as non-gaming projects.

He received his Bachelor of Science in Civil/Structural Engineering from Northeastern University in Boston and is a registered professional engineer in several states. He is an active member of AISC, Structural Engineers Association of Nevada and California, and the International Code Council. Tofighi is also currently serving as the co-chairman of the Southern Nevada Building Code Committee.

► A founding partner and lead designer for Little Rock, Ark.-based Polk Stanley Wilcox Architects, **Wesley Walls**, AIA, has helped elevate the firm to high standard of design excellence. Walls has been recognized for his work with numerous state, regional and national awards. His creative and innovative talent has earned him a strong reputation in the architectural community, and his attention to detail and schedules is predominant in all of his projects.

With more than 20 years of experience, he has led the firm's focus on higher education and research commissions. In the past year alone, Walls managed more than \$100 million in successful projects of all sizes and complexities. His recent work includes the One-Stop Student Services building at the University of Arkansas at Little Rock; the College of Public Health building and the Psychiatric Research Institute at the University of Arkansas for Medical Sciences; and the Faculty Office Building at the Arkansas Children's Hospital. Walls earned his Bachelor of Arts in Architecture at the University of Arkansas.

► **Duff Zimmerman**, P.E., is the manager of operations with AISC member Cooper Steel Fabricators Inc., Shelbyville, Tenn., an AISC-certified, full-service steel fabrication and erection company.

He currently serves on the Steel Erectors Association of America (SEAA) board as immediate past president. Zimmerman has been the editor of *The SEAA Connector* magazine. He is also a member of the AISC Research Committee and TI/BIM Committee. He has been a member of the AISC Safety Committee and been a presenter at the NASCC: The Steel Conference. He holds a Bachelor of Science degree from the University of Tennessee in Civil Engineering.

► **Thomas L. Klemens**, P.E., is senior editor of *Modern Steel Construction* magazine, published by the American Institute of Steel Construction, Chicago. His editorial career spans two decades with a variety of engineering and construction related magazines.

Prior to entering the publishing field, Klemens worked as a structural engineer with the Chicago-based consulting engineering firm Sargent Lundy, spending nearly three years on site at the Braidwood (Ill.) Nuclear Power Station. He also was a project manager for Northwest Group, one of the contractors involved in construction of the United Airlines terminal at Chicago's O'Hare International Airport, and a field engineer with highway and bridge contractor S.J. Groves and Sons, Minneapolis. Klemens also is an adjunct instructor at Harper College, Palatine, Ill.



Merit Award—Greater than \$75 Million
510 MADISON AVENUE, NEW YORK

5 10 Madison Avenue is a 429-ft-tall, 30-story boutique office building on East 53rd Street in the Plaza district of Midtown Manhattan. This modernist tower provides clean façade lines and flexible interior spaces for tenants. The project is pursuing LEED Gold certification. The building includes a fitness club with 50-ft pool and a private restaurant, both reserved for tenants and their guests, along with a large landscaped terrace overlooking Madison Avenue. The upper office floors have views to Central Park.

The building sounds like any other plain vanilla office building until you look more closely. The structural steel virtually disappears, taking up less floor space and providing additional headroom. This is not a traditional economical structure where the lightest steel members were selected to reduce the steel tonnage. Rather it is a modern, value-driven structure, providing the most value for the owner by squeezing the structure, opening up the floor area, raising the ceiling and letting aesthetic requirements control the design.

510 Madison is engineered to allow open column-free floors. Trusses and transfer girders connect the tower—seventh floor and above—to the base, allowing the tower floors to cantilever over the adjacent building to the west. The upper floors have no interior columns, while the lower floors have only three.

The typical floor-to-floor height is 13 ft, 6 in. which allowed for 10-ft clear height to the finished ceiling. Floor slabs are constructed of 2.5-in. normal-weight concrete over 3-in., 18-gage metal deck. Floor framing members are designed to work compositely with the floor slab, and typically span approximately 55 ft. These beams are limited to W18 series to allow maximum headroom with future flexibility.

The building core is compactly located on the south side of the tower. The core is surrounded by steel braced frames which were carefully coordinated with the design team to provide adequate door opening clearances and passages for ductwork from the mechanical room. All building columns are engaged in the lateral load resisting system.

The braced frames incorporate outrigger trusses at the 6th and 30th floors providing lateral stiffness in the north-south direction. Braced frames combined with moment frames along the north and south sides provide resistance in the east-west direction. The braces are wide-flange sections ranging from W14×53 to W14×500. The design was also assessed for multi-hazard, progressive collapse resistance.

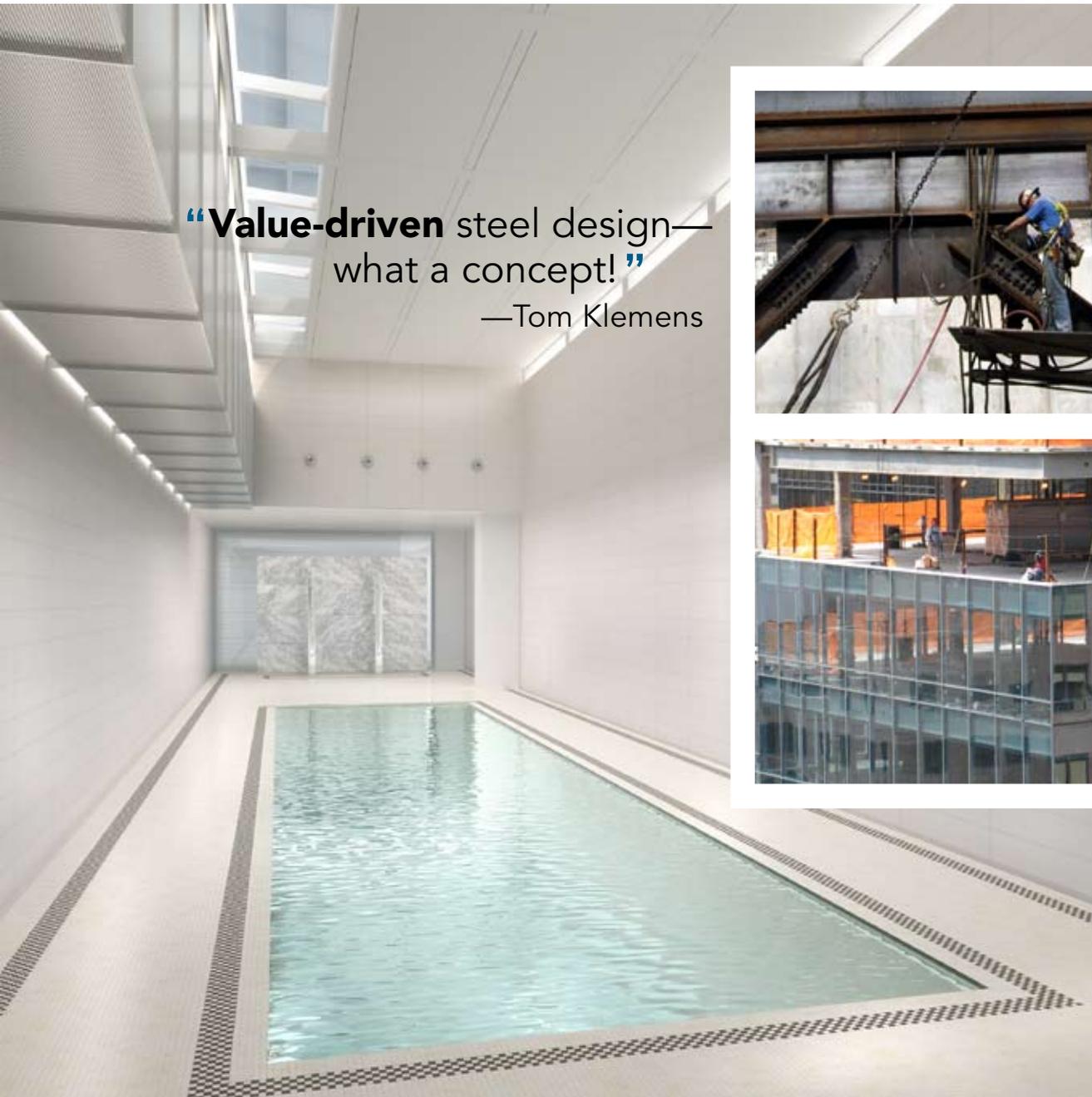
The perimeter columns are disengaged from the glass; the façade is anchored into the slab edges. Spandrel beams are W30s with round openings through the web for sprinkler line access to the glass façade.

The truss at the 6th floor is supported by 6-ft, 9-in.-deep built-up plate transfer girders in the ceiling of the fifth floor to reduce the number of interior columns in the lower floors.

Photos: David deArmas/Moed deArmas & Shannon

**“Value-driven steel design—
what a concept!”**

—Tom Klemens



The site was studied in a wind tunnel. Using that data and the building properties, engineers at the Boundary Layer Wind Tunnel Laboratory at the University of Western Ontario performed desktop studies and determined the controlling design parameter was to limit torsion at the top-most corner office space.

The fitness club in the cellar is accessed by an architecturally exposed steel stair. The skylight over the pool and the glass footbridge leading from the elevators to private dining are also framed using steel.

GMS designed all the steel connections, provided special inspection of the steel and served as the façade consultants.

Owner

Boston Properties, New York

Developer

Macklowe Properties, New York

Design Architect

Moed deArmas & Shannon, New York

Architect of Record

SLCE Architects, New York

Structural Engineer

Gilsanz Murray Steficek, New York (AISC Member)

Steel Detailer

WSP Mountain Enterprises, Sharpsburg, Md. (AISC Member)

Steel Fabricator

Banker Steel Co., LLC, Lynchburg, Va. (AISC Member)

Steel Erector

Helmark Steel Inc., Wilmington, Del. (AISC Member)

Construction Manager

Tishman Corporation, New York (AISC Member)

Structural Software

ETABS, RAM Steel, SAP